HANFORD SITE TECHNOLOGY COORDINATION GROUP
MANAGEMENT COUNCIL MEETING MINUTES

September 28, 2000
Federal Building, Room 780
8:15 a.m. – 12:00 noon

INTRODUCTIONS/ANNOUNCEMENTS

Debbie Trader welcomed the members and introductions were made. Paul Kruger, the Acting Deputy Manager for Site Transition, has agreed to become the Chair of the Management Council.

OPENING REMARKS – Paul Kruger, RL

He has observed STCG outcomes for a long time and is exited about becoming the new Chair. He is also excited about Keith Klein's three Site outcomes and wants to focus science and technology around these outcomes. In his recent visit, Gerald Boyd talked to us about wanting to have a Site-wide S&T Plan. It would be a powerful tool for him to go to the Hill to get funding to develop some of the needed technologies.

UPDATES

Site-wide S&T Plan – Debbie Trader, RL

A meeting was held with Gerald Boyd. He would like Hanford to develop an integrated Site-wide S&T Plan. This is a good opportunity for the Site. The Mission Planning Division (Rich Holten) is taking the lead. Gerald wants it by November 30, but Debbie thinks that is too soon. The target is December or January. Keith Klein has a strong ambition to drive this quickly. We may try to have an integrated plan between RL and ORP, but the timing might not allow it. We can define our S&T needs in each area now, and then flesh out the plan later. PNNL will be helping Rich consolidate existing information, and they will be coordinating with the STCG.

Hanford Technology Deployment Center Ad Hoc Committee Report – Debbie Trader, RL

Years ago, we heard many presentations about the Hanford Technology Deployment Center. A group of people volunteered to serve on an Ad Hoc Committee to review the old information and determine if it is still relevant. The Committee met three times since May 2000 and looked at a number of issues. Things are not happening as fast as we would like them to. One intriguing concept we discussed is a Site deployment fund, with seed money to "jump start" technology deployments. Any cost savings from deploying the new technology would be put back into the fund for future deployments.

Questions/Comments:

Beth Bilson: How would it be coordinated with the Pollution Prevention Program, which is very similar? Debbie was not familiar with that program, but said we would look into it.

Other issues were discussed in the Ad Hoc Committee meetings, such as driving the STCG process to be more successful and impactful. In FY 2000, with Harry Boston as the Chair, we had a lot of energy. This will continue with Paul Kruger as the Chair. One suggestion was for the Subgroups to focus on their top three needs and try to make something happen. A second suggestion was to get the relevant cleanup project managers to attend the Subgroup meetings. A third issue was to tie S&T into key Site activities and initiatives. We want to get this whole process championed on Site to make this group more meaningful.

Debbie's personal goal is to get this group back to the point of sharing information. She would like to see that issues such as not getting adequate support for technology be raised in the STCG forum first (before being brought up in meetings with visitors from HQ).

Nancy Uziemblo asked if RL had some funding similar to Savannah River's "quick wins". The Ad Hoc Committee talked about identifying near-term deployment options in case there were extra dollars available, and putting these on the RL "Buyback List". In August 2000, we solicited ideas from the contractors to see if they had projects that could benefit from a deployment fund". Jerry White said that often we find a good technology, but have no funds to deploy it. Terry Walton did not have time to work with the projects in August to select a particular technology deployment need to submit. He did not want to pursue a path that was not fully integrated with project activities. Terry is really excited about the PNNL/FH partnership in technology. They have talked to FH management about setting aside funding during the fiscal year for deployments. Ron Hanson has the vision to make this happen.

Dan Tano said that when they got further along, they found that there was no extra funding. Also, they decided that people needed to "get their ducks in a row" before asking RL management for seed money. Nancy asked if we should talk about the concept first or look at projects. Dan suggested we look at projects first then look for money to fund them.

Paul Kruger said he always get nervous when we talk about pots of extra money. On the other hand, conceptually, it is a valuable thing to do. We do need some quick successes. Can we define some quick wins for the Site-wide S&T Plan we're doing for Gerald? A component of the "plus-up" could include this deployment fund. If we really had some quick wins identified, we might be able to go the Site Management Board to get funding, but it would be tough.

Beth Bilson suggested looking at projects that would pay back in the same year. Maybe OST would see that we are putting money in, and they might leverage our funds since they would know that we were serious. Paul Kruger agreed that the idea has merit. Bob Holt said that's how they got the Waste Minimization Program up and running in the 1990s. Jerry White added that in the 1980s, environmental startup projects were funded by a central fund. The same is true with the GW/VZ roadmapping effort. There is some history here on Site where we had

discretionary money. Billie Mauss would be a little bit careful about counting on Gerald for funding, since the EM-50 process does not take this into account at all.

Wade Riggsbee encouraged the Site to follow through with the deployment fund concept. That's how other programs have gotten funded in the past.

FY 2001 OST Budget – Jim Hanson, RL

Jim Hanson provided a snapshot of FY2001 funding associated with EM-50, broken down by Focus Area. This represents a minimum of $21 million of non-baseline funds working to solve Hanford problems. The next iteration of the list will provide greater detail to the AMs on the dollars in their specific organizations. Nancy Uziemblo requested a copy. Terry Walton suggested that we have a handout at each meeting. Jim said that as soon as the table is modified, it will be sent out to everyone. In addition to the funding on the list, there are two Pollution Prevention tasks, In Situ Redox for $450K, and a TRU task coming to the Site for about $1M.

Beth Bilson said there is a lot of technology development and application work going on at other sites. She has never seen any data on that kind of thing. Debbie said that the Focus Areas track that and we could provide it to the Subgroups.

Technology Update: "Drain Line Robot" – Sharon Bailey, PNNL

BHI is leading the Canyon Disposition Initiative (CDI) for final disposition of the chemical processing facilities on the Hanford Site. PNNL was hired to collect characterization data in a 24-inch diameter drain line under U-Plant. It is a very constrained environment, 37 feet deep. A robotic vehicle, 9 inches by 9 inches by 48 inches, was used to look at structural integrity and characterization and sampling activities. It was equipped with a real-time sensor that detects gamma radiation. The vehicle was retrieved from the drain line. It is hoped that the tracks and the camera can be taken off the vehicle. The rest of it is disposable. The test took two 15-hour days, including a media event. Shannon showed a video of the robot in the U-Plant drain line.

BHI S&T PLANNING – Jerry White, Technology Application, BHI

Jerry showed a poster listing all 36 technologies deployed by BHI since it came on board. Pam Brown asked if it could be posted on the wall at the next HAB meeting.

BHI is totally project-driven. There are five major projects for FY2000. The main purpose of the Technology Application (TA) Program is to support those projects. There has been a lot of partnering with PNNL to identify and evaluate technologies and decide whether to demonstrate or deploy them. The five major projects are:

Subsurface/Vadose Zone

- Remedial Action/Waste Disposal Project
- Groundwater/Vadose Zone Integration Project

D&D

- Decommissioning Project (Reactor Interim Safe Storage)
- Surveillance, Maintenance and Transition Project (CDI)
- 233S Plutonium Concentration Facility Project

BHI Planning is focused through the Detailed Work Plan process. TA facilitates all elements of science and technology:

- S&T needs development
- Technology Insertion Points (TIPs)
- OST funding and support
- Technology demonstration and deployment

BHI maintains strong interfaces with the Decontamination and Decommissioning Focus Area and the Subsurface Contaminants Focus Area (SCFA). BHI staff go to the Focus Area location at least once a year and the Focus Area representatives come to Hanford at least once a year. The purpose of these visits is to share accomplishments and clarify S&T needs and funding support. The Innovative Treatment Remediation Demonstration (ITRD) and Technical Assistance Programs have no money coming to the Site, but there is assistance available to help work through Site problems.

Questions/Comments:

Pam Brown asked if BHI has had opportunities to work with other sites on cocooning reactors. Jerry said that it is an advantage that BHI is a contractor at a number of DOE sites. He has worked with all of them. Beth Bilson added that BHI staff have gone to other sites several times. Someone was on detail at Brookhaven for almost a year. Jerry also said that they gave taken some of their technologies over to the Ukraine to help solve their problems.

SCFA representatives will be visiting Hanford on October 12-13. BHI will try to have the projects identify three different problems they are trying to solve, and work with SCFA to find out how they can help us solve them.

BHI also works with PNNL to respond to Focus Area Requests for Proposals (RFPs). It is important to work with Laboratories to take the advantage of the S&T funds.

Pam Brown asked about the outcome of outside researchers evaluating the elevated tritium problem. Jerry said that the Technical Assistance Program allowed them to develop a plan to solve the problem. The program is set up so that the expertise is available across the Complex. SCFA established a lead lab concept with experts at each site that can be called upon. Pam requested an update on this topic.

Nancy Uziemblo asked about RFPs to the Laboratories. Usually they are related to technology development or science issues and they are targeted toward Laboratories, universities, and industry. Some bids come out the DOE contractors. When PNNL gets a call, they work very closely with FH, CHG, and BHI to make sure the projects are involved in the proposal from the beginning.

Dib Goswami asked what role SCFA played with the GW/VZ Integration Project at the 618-11 burial ground. Jerry said that TA works with the projects to identify their needs. When they need technical support, their job is to get them that support.

Pam Brown asked Paul Kruger if STCG members could be part of the Focus Area meetings when they come to Hanford. Paul said that the meetings are open and that the Subgroup members are always invited.

OVERVIEW OF S&T NEEDS PROCESS – Jim Hanson, RL

Jim gave a quick presentation on the status of the S&T needs process. Hanford has changed the manner in which the needs are developed. The S&T needs process is now integrated with the project planning activities. The STCG Subgroups are scheduled to complete their endorsement of the needs by November 3. The schedule for ORP is about two weeks later, although ORP will provide drafts to TFA in the interim.

TECHNICAL REVIEWS – Terry Walton, Technology Management, FH

The purpose of Technology Management (TM) is to be the advocate for technology. They are paying attention to both planning and execution. The planning side should lead to technology deployments.

The S&T needs, the TIPs, and the technical reviews are key components of planning. Last year, TM took an integrated look at the needs and TIPs and what each of the projects told them. They also looked at what was being done in the Complex and industry, and then looked at things they might do. They were then able to go to the Focus Areas to discuss what their needs were and they will get some funding for the needs. All of this information feeds into the S&T Plan, where the required technology is inserted.

Paul Scott, FH, provided some highlights from the technical reviews. This has been the pilot year for these technical reviews. They came about as an outgrowth of TM's dissatisfaction because the S&T needs were not really representing project needs. Their objective was to find out what the real needs were. Then they would look at what the technical risks and challenges to the technical baselines were, and the projects could take actions to reduce vulnerability. Each review took about a week's time, and then a report was written.

Review Approach

- Identified projects
- Assembled team
- Reviewed baseline documentation
- Identified areas of concern

Projects and Topics Reviewed

- Spent fuel – one review
- River Corridor – five reviews
- Waste Management -- one review
- Nuclear Materials Stabilization – three reviews

Key Results and Impacts

- Mature projects (in or near production)
  - Spent Fuel
  - Polycubes and Plutonium Solutions Stabilization
- Developing Projects
  - Z-361 (PFP crib settling tank)
  - 340 vault and tank T-105 cleanup
- Outyear Projects
  - M-91-03 Project (remote-handled TRU)
  - 327 Building Deactivation Strategy and Endpoints

FY 2001 Plans

- Candidate reviews identified by projects
- Review scopes to be negotiated
- More engagement by contractor and DOE senior management
- Fold results into S&T plans
- Continue follow-up on review recommendations

The goal is for recommendations from technical reviews to be integrated into the projects.

Questions/Comments:

Pam Brown asked if they involved regulators on the M-91 project discussion. Paul said that they consider these reviews Business Sensitive, so they were not inviting regulators. However, they did invite Paul Day, who has a wealth of regulatory experience from his previous job.

SUBGROUP REPORTS

Subcon - Arlene Tortoso, RL

Arlene announced that Rob Yasek from ORP is the new Co-Lead for the Subcon Subgroup. He is helping to integrate the Subgroup with the Groundwater/Vadose Zone (GW/VZ) Project. This is the first year we have integrated the GW/VZ needs based on the S&T roadmap. The needs statements were distributed it to all Subgroup members for review. Representatives from the Subsurface Contaminants Focus Area (SCFA) will be at Hanford on October 11-13. BHI staff and Mike Thompson will convey our needs to them.

Mark Freshley, who manages the S&T portion of the GW/VZ Project, discussed the S&T needs for the project. They have use a roadmapping process to identify their S&T needs. Last year an

S&T summary description document was published, which is available on the project website. The vadose zone element of last year's S&T needs resulted in this year's EMSP call for proposals related to the Hanford vadose zone needs. This year the GW/VZ Project completed the process to include the risk technical element into the roadmap and they updated the document. The integrated needs for risk element have now been defined. All relevant technology insertion points (TIPs) or science insertion points (SIPS) have been incorporated into the S&T needs. The GW/VZ Project will use this roadmap as a way to communicate with DOE to bring resources to bear on our Site problems. There are several new SCFA projects coming on line in FY01, and hopefully we can affect the risk.

The roadmap will be updated in the future to incorporate several other elements, including long-term monitoring and remediation. The effort was pushed out because we couldn't fund those activities in FY00. The project is working with Mike Graham and the BHI Technology Application Program to complete the remediation roadmap in FY01.

Mixed Waste - Kevin Leary, RL

Kevin Leary, the new Subgroup Lead, just transferred here from the Nevada Test Site, where he was active in their STCG for six years. The main focus is how to get more money from the Mixed Waste Focus Area (MWFA). The Mixed Waste Subgroup identified four new technology needs this year:

- Chemical analysis to meet WIPP waste acceptance criteria
- Integrity of buried large containers
- Nondestructive assay of large buried containers
- Plutonium contamination control large containers load in/load out systems

Kevin reviewed the status of the mixed waste S&T work that is being done at Hanford in a number of areas. FY01 funding of $881K was received to evaluate remote size reduction of oversized equipment and waste containers and future incoming waste container design for TRU waste to meet WIPP waste acceptance criteria. A technology insertion point (TIP) has been added to the PMP for TRU/mixed TRU waste for retrieving and processing RH-TRU waste. A technical review was recently completed of the PMP for all facilities needed to retrieve, transport, and package RH-TRU and mixed TRU waste. The review identified uncertainties facing the path forward and provided recommendations. A pollution prevention proposal for a TRU waste retrieval mobile assay system was accepted and FY01 funding of $556K was received. This system will assay containers at the burial site, thus avoiding shipment of LLW to WRAP and back.

Kevin presented some recommendations for how mixed waste S&T can be done more effectively at Hanford. These are in part based on lessons learned at the Nevada Test Site. One idea is to partner with other sites with similar needs to apply for MWFA funding. Kevin recommended that all the mixed waste needs be combined into the following four categories:

- Treatment
- Robotics and remote handing

- Industrial process design
- Characterization

A programmatic cost benefit analysis should be conducted to evaluate the level of effort versus the availability of funding to allow us to structure our level of effort accordingly.

An STCG business plan (or roadmap) should be done annually with the following components:
- Put together a flyer bragging about STCG success stories.
- Evaluate opportunities to partner with other DOE sites on technology development.
- Target workshops, conferences and committees to encourage networking with critical STCG personnel at other sites.

The STCG should evaluate funding mechanisms to bring in new contractors to energize the program and/or rotate existing members with new people. The STCG should also evaluate the potential to establish a DOE-funded research cooperative program with the State of Washington University system. Finally, we should conduct an annual workshop with Focus Area and project leads, contractors, and the National Laboratories to develop new needs and refine old needs.

Pam Brown said that since the needs related to remote TRU are Complex-wide, what sort of efforts are being made to work with other sites? Bill Bonner stated that we are working with the MWFA for funding of size reduction needs at Hanford, and people at West Valley are involved, too. The same principal investigator is also working with a related project at Savannah River. Terry Walton noted that we are also tied into a Rocky Flats effort for remote sizing.

D&D – John Sands, RL

John introduced himself as the new Co-Lead for the D&D Subgroup who is taking over from Jim Goodenough. He is the project manager for CDI, and noted that Jerry White and Sharon Bailey had already presented information about the drain line cleanout and related robotics work. About six companies are involved in the CDI effort.

Cell concrete coring is another key area where work is underway. Currently a BROKK drilling machine is taking core samples of the concrete cell floor. The diamond drill bits were hitting some impenetrable plate and were being damaged, but they finally got 16 core samples.

For FY2001, the D&D Subgroup has:
- 31 technology needs from BHI
- 21 technology needs from FH
- 4 technology insertion points.

Nuclear Materials - Allison Wright and Bob Holt, RL

Bob introduced himself as the Co-Lead of this new Subgroup. He also represents Hanford on the National Spent Nuclear Fuels Program. Bob provided an overview of the Nuclear Materials Focus Area (NMFA). Two field offices have teamed to lead this effort – Albuquerque and Idaho. LANL is lead lab. There are four product lines in the NMFA, but only two have funding

this year: 1) stabilization and 2) packaging and transportation. A product line manager for long-term storage and monitoring issues has been identified - Dave Robertson from PNNL.

The Nuclear Materials Subgroup at Hanford was formed in response to the new Focus Area, and it includes our spent nuclear fuel S&T needs. There have been two Subgroup meetings so far. Just a couple of days ago, the Subgroup presented their S&T needs statements for this year. The budget for NMFA for FY2001 is only $7.6M for the whole Complex, and has been allocated to Stabilization ($3.9M) and Packaging and Transportation ($2.5M). Hanford currently has some proposals in the system that may be funded.

Allison Wright, the other Nuclear Materials Subgroup Co-Lead, is in the Nuclear Materials Disposition Division, and is focused on materials disposition at PFP. The NMFA will be sending a delegation to Hanford on October 11-12. This is a good opportunity for them to meet with the Subgroup and the principal investigators at PNNL whose proposals were just funded. A discussion is planned on the materials disposition maps and how the S&T needs fit into them. The NMFA representatives want to review our S&T needs in depth, and they will also bring some of the S&T needs from others sites that may be related.

An RFP came out on June 7 from the NMFA. Hanford sent six proposals, all related to PFP. Two received funding and TTPs are in place. One is to develop a hot box for PFP furnaces to speed up the processing of plutonium solutions by optimizing the cooling cycle time. This work involves stabilization of plutonium solutions to meet a DNFSB milestone. The second deals with optimizing the magnesium hydroxide precipitation process for stabilizing PFP plutonium/nitric acid solutions.

The S&T needs that PFP submitted this year were much improved over those submitted last year. We will see a lot more interaction with the NMFA this year and hopefully receive more funding next year.

Tanks - Billie Mauss, ORP

There is a Tanks Subgroup again, and its focus is limited to tanks and the vadose zone. Billie is on loan to ORP to re-establish a technology program. Harry Boston is now the Manager of ORP, and he supports the STCG.

This year's S&T needs are categorized as:

- Baseline technology needs
- Operations and safety technology needs
- Strategic technology needs

Technology is required to meet legal commitments in the SST Tank Retrieval and Tank Integrity areas.

Billie mentioned the following recent ORP technology activities:

- SY-101 crust growth

- AZ-101 process test
- Salt chemistry workshop
- Variable-depth fluidic sampler
- Remote pit operations system
- SST Retrieval technology development
- Continuation of HTI crawler development
- Saltcake tank retrieval
- Leak detection mitigation and monitoring
- Corrosion probes

SUGGESTIONS FOR FUTURE AGENDA ITEMS

- S&T Needs for Long-Term Stewardship (Hanford & Complex) – Bilson
- Site-Wide S&T Roadmap – Bonner
- Discretionary Funds for Technology Deployment – Kruger